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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,830	01/17/2001	Jun Fujita	06761.0040	4920

22852 7590 10/31/2003

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER	
RO, BENTSU	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 10/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/760,830	FUJITA, JUN	
	Examiner	Art Unit	
	Bentsu Ro	2837	

-- The MAILING DATE of this communication appears n the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

FIRST OFFICE ACTION AFTER RCE

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hashimoto US Patent No. 5,555,178. (This is a new reference.)

Claims read onto Hashimoto's teaching as follows:

The claims:	**Hashimoto's teaching:**
Claim 1. (Currently amended) a position control method for feed drive equipment for a machine tool	Fig. 3 shows a position control apparatus (and method) for feed drive equipment of a machine tool; Fig. 3 includes a position detector, therefore, it is a position control method; Fig. 1 shows a machine tool having z-axis and ballscrew 13, therefore, it is a feed drive equipment of a machine tool;
in which a plurality of screws are disposed in parallel for feeding a movable body associated with the machine tool,	Fig. 1 shows two ballscrews, one has been labeled as "13", the other one has no label; the ballscrews are positioned at a z1 axis and a z2 axis respectively, therefore, they are parallel; the workpiece 5 is a movable body associated with the machine tool; it is noted that the ballscrews feed to move the movable body 5 at a specific position;
the screws being individually driven by servo motors;	Fig. 3 shows separate servo motors 14 and 24 for driving the respective headstocks 12, 22 mounted on the ballscrews;
the position control method comprising:	

determining torque of the servo motors as they drive the screws, and	Fig. 3 shows torque controllers 15, 25 for determining torque of the servo motors as they drive the screws
correcting position commands of at least one servo motor in dependence on determined torque	Fig. 3 shows a position feedback signal 40 and a position command value 42, both signals are inputted to an error counter 17 for correcting the position command value 42 with respect to an actual value 40;
so that the servo motors have matching torque.	the servo motors receive the same amount of position command pulses Cpz, therefore, the servo motors have a matching torque; **alternatively:** Fig. 1 shows a workpiece 5 held in a fixed position by headstocks 12, 22 on a common shaft, the force from both sides of the workpiece 5 must be identical or otherwise the workpiece 5 will move to either side of the headstock, because the workpiece 5 is not moving in the axial direction, the forces applied to the workpiece 5 must be identical; because the forces are identical, the servo motors 14, 24 must exert equal torque or matching torque.
Claim 2. (Previously presented) A position control method for feed drive equipment according to claim 1, wherein torque of the servo motors are matched to an average of the determined torque.	Any torque desired by the operation is an average of the determined torque and the servo motors must match such a desired torque by the operation of Fig. 3 circuit.
Claim 3. (Previously presented) A position control method for feed drive equipment according to claim 1, wherein torque of one servo motor is matched to the determined torque of another servo motor.	Same argument as that of claim 1.
Claim 4. (Previously presented) A position control method for feed drive equipment according to claim 1, wherein a value of a	The current controller reads onto Fig. 3, the power amplifier 19;

torque command to be input to a current controller of each servo motor is determined as the torque of the servo motor.

a torque command is issued from the torque controller 15;
it is noted that the torque of the servo motor 14 is determined by the torque controller 15.

Claims 5-8 are second group claims and claims 10-13 are third group claims. The subject matter of claims 5-8 and 10-13 are very similar to that of claims 1-4, discussion is omitted.

Regarding claim 9, Hashimoto's Fig. 1 shows a ballscrew 13 and a feed nut on the headstock 12. The feed nut coupled to the ballscrew, therefore, the feed nut apply torque to the servo motor 14 via the ballscrew 13.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

October 29, 2003

Bentsu Ro
Primary Examiner